TITLE OF INVENTION
Fully adjustable hunting tree stand.

CROSS REFERENCE TO RELATED APPLICATIONS
Not Applicable.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT
Not Applicable.

REFERENCE TO A MICROFICHE APPENDIX
Not Applicable.

BACKGROUND OF THE INVENTION

1. Field of Invention

The present invention relates to a fully adjustable tree stand that's capable of attaching to a tree limb of any angle and/or a tree trunk of any angle.

2. Description of Prior Art

The following information is a brief description of the most common tree stands available. Tree stands provide a hunter with an elevated area in a tree to hunt and observe game animals. Among the different shapes, sizes and materials used, tree stands generally fall into three categories.

A portable, fixed-position tree stand also known as a hang-on stand, comprises of a platform and a seating component. The platform connects to one end of an elongated mounting bracket, with the seat connecting to the mounting bracket's other end. Different methods secure the mounting bracket to a tree. The mounting bracket attaches to a tree in an upright vertical position. A strap, chain or other device connects to one side of the mounting bracket, wraps around the tree and connects to the opposite side of the mounting bracket. After securing the mounting bracket to the tree, the platform folds down extending out and away from the tree. The platform achieves a horizontal, leveled plane perpendicular to the mounting bracket.

A climbing tree stand is designed to use a platform and a seat component in conjunction with one another to ascend up a tree trunk. A disadvantage with a climbing tree stand is that the trunk of the tree must be free of any limbs extending out from the

tree trunk in order for the functioning purpose of the stand to be effective. Very few trees have a trunk free of limbs at any given height on the tree.

Another tree attachment device, the ladder stand consists of a ladder with a platform attached to the upper end. The platform leans against a tree with the ladder in an upright position. The ladder and the tree provide the support for the platform. A common disadvantage with a ladder stand is that the length of the supporting ladder determines the maximum, elevated height the platform can achieve. Another disadvantage of both the climbing stand and the ladder stand is that they are both larger in size, compared to a fixed-position stand. The larger size requires more effort in transporting such stands from one tree to another. An advantage of a fixed-position tree stand is that it's smaller and lighter in overall size. This makes it easier for the hunter to transport the stand to different locations. Compared to the climbing stand and the ladder stand, a fixed-position stand has a lesser degree of limitation in how high the stand can be attached in a tree.

The advantages that set apart a fixed-position stand from all other tree attachment devices makes it a preferred choice among hunters or observers who frequent multiple hunting areas. The disadvantage of a fixed-position tree stand is that it relies on a tree having vertical characteristics. Placing the mounting bracket in an upright, vertical position is necessary in order for the platform to achieve a horizontal, leveled position. If the mounting bracket is attached to a tree trunk that is not completely vertical then the platform of the stand will not be level. This then decreases the secured stability of attachment and creates a dangerous situation for the user. The climbing stand and the ladder stand must also rely on a vertical trunk for means of attachment.

Because all of the above mentioned stands rely on a tree for an elevated means of attachment, limitations will surely be placed upon them by the tree. The number of limbs on a tree, the angle of a tree and the size of a tree must all be taken into consideration by the user of such stands when selecting a particular tree for attachment. These most common disadvantages limit the user of such stands to a limited number of trees for attachment. Accordingly, no tree stand has been made available which has the capability of attaching to a tree limb of any angle and/or a tree trunk of any angle, and still maintain a

secured horizontal, leveled platform. The present invention provides a tree stand not subject to the described limitations; therefore, the user of the stand does not have to settle for a tree of second choice.

SUMMARY OF THE INVENTION

The object of the present invention is to provide a fully adjustable hunting tree stand that can attach to a tree limb of any angle and/or a tree trunk of any angle. The present invention enables the platform to achieve a horizontal leveled position, regardless of the tree's angle.

The object of the present invention is also to provide a tree stand not subject to the described limitations a single tree can place on any of the prior art tree stands, particularly to how a tree limb and/or a tree trunk is angled.

The object of the present invention is also to provide a tree stand that can easily be attached to a portion of the tree with little effort. With prior art tree stands the user has to compete with the larger size and weight of the platform when attaching the stand to a tree. The present invention provides a separate tree attaching component that is light, compact and free of both the platform and the seat, thus, making it easier to manipulate and less dangerous when attaching it to a portion of the tree.

As a result of these objectives, a single tree of appropriate size can literally provide dozens of separate, elevated locations in a tree that the present invention tree stand can be attached to. The present invention provides a new fully adjustable hunting tree stand that is more flexible then prior art tree stands. Additionally the present invention solves a recognizable disadvantage that is found in all types of tree stands. Anyone who has had experience in using any of the prior art tree stands knows that the angle a trunk or limb consist of is an important factor when choosing an area for attachment.

In accordance to the present invention the following is a brief description of the various components and their interconnection and functioning purpose. The descriptive matter of such components can be altered and manipulated along with their interconnection and functioning purposes. The described components represent only one

embodiment of the present invention. Different components can be used to achieve the same benefits and stay within the scope of the enclosed invention.

The present invention comprises of a mounting base and a support member. A platform and a seat are attached to the support member. A receiving bracket is axially attached to the mounting base. The mounting base laterally attaches to any angled portion of a tree, extending in the same direction thereof. The receiving bracket pivots a full 360degrees from a point of axis relative to the mounting base. Once the mounting base is secured to a tree the receiving bracket is rotated into an upright vertical position. Locking pins stabilize the rotational movement of the receiving bracket. The support member attaches to the receiving bracket in an upright vertical position. The vertical position of the support member enables the platform to achieve a horizontal, leveled position perpendicular to the support member. The seat achieves the same leveled position and directly above the platform.

The receiving bracket is connected to a flat circular wheel by a tubular bar. The wheel pivots within the perimeter of all the outer edges of the mounting base, centrally positioned therein. The tubular bar attaches to the flat surface side of the wheel on the point of axis. The tubular bar is positioned in an upright position, at a 90degree angle to the flat surface side of the wheel. The bar extends upward passing through the center of the upper top edge of the mounting base. The receiving bracket attaches to the erected end of the bar. The wheel, the receiving bracket and the tubular bar are all permanently attached together. In conjunction with each other they serve as a single rotating component.

A multiple number of pre-drilled pinholes are positioned completely around the circumference of the circular wheel. A specified number of pre-drilled pinholes pass through the upper surface side of the mounting base and are spaced a specific length apart, in close proximity to the tubular bar. A specified number of pre-drilled pinholes pass through the lower surface side of the mounting base and are directly aligned with the pinholes on the upper surface of the mountain base. As the receiving bracket is rotated the wheel rotates in direct relation thereof. Any number of the multiple pinholes on the wheel come directly aligned with the pinholes on the upper and lower surface of the

mounting base. Such alignment occurs at slight rotating intervals completely around the 360degree circle of rotation.

Once the mounting base is secured to a tree limb and/or a tree trunk, of any angle, the receiving bracket is rotated until it achieves an upright vertical position. Locking pins are inserted into the described aligned pinholes, thus, stabilizing the rotational movement of the receiving bracket. The support member is then attached to the receiving bracket. The ability to rotate and stabilize the receiving bracket in an upright position enables the support member to achieve an upright position, regardless to the angle of the tree. The upright position of the support member enables the platform to achieve a horizontal leveled position.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded view of the mounting base according to the present invention.

FIG. 2 is a front plane view of the mounting base.

FIG. 3 is a side plane view of the mounting base.

FIG. 4A is a perspective view of the mounting base attached to a vertical tree trunk.

FIG. 4B is a perspective view of the mounting base attached to a horizontal tree limb.

FIG. 5 is a partial perspective view of the support member and its interconnection to the mounting base.

FIG. 6 is a perspective view of the present invention completely assembled, attached to a horizontal tree limb.

FIG. 7 is a perspective view of the present invention shown in FIG. 6 being used by a hunter.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

A fully adjustable hunting tree stand comprises of a mounting base attachable to a tree trunk and/or tree limb of any angle. An elongated support member attaches and detaches to the mounting base. The support member comprises of a platform and a seat. The mounting base as a whole is referred to reference numeral 10A. Support member as a whole is referred to reference numeral 10B. Numerals' 10A and 10B are used throughout the detailed description of the preferred embodiment.

Referring now to Fig. 1 an exploded view of the mounting base 10A. Mounting base 10A includes two elongated pieces of hard material, preferably angle iron. Angle iron 15A and 15B run parallel to each other and spaced a fixed length apart. Angle iron 15A and 15B are positioned so that one of 15A and 15B's flat edges faces upward, with the other flat edge of 15A and 15B facing to the outer side. A flat squared shaped piece 16, preferably made of flat iron, connects to the bottom flat edge of 15A and 15B, centrally positioned. Metal piece 16 connects to angle iron 15A and 15B preferably by welding. A circular hole 21 passes through the center portion of metal piece 16. Four smaller pre-drilled pinholes 27 are located on metal piece 16 and placed a specific length apart.

A flat circular shaped wheel 17, preferably made of metal is attached to a tubular bar 19. The wheel 17 and the tubular bar 19 resemble an axle. The tubular bar 19 passes through a ball bearing 20 and then through hole 21. The bar 19 extends slightly past metal piece 16's upper surface. Once the bar 19 passes through hole 21 a receiving bracket 22 connects to the erected end of the tubular bar 19. The tubular bar 19 attaches to the bottom surface side of the receiving bracket 22, centrally positioned thereof. Receiving bracket 22 is preferably a rectangular shaped piece of flat iron. A threaded peg 23A is positioned at one end of the receiving bracket 22 and threaded peg 23B is positioned at the other end of the receiving bracket 22. A second flat-squared shaped piece of metal 18 connects to the bottom straight edge of angle iron 15A and 15B. Piece 18 comprises of four pre-drilled pinholes 25 spaced the same specific length apart as to the four holes 27. Both metal pieces 16 and 18 enclose the circular wheel 17, the ball bearing 20 and a portion of the tubular bar 19. The round wheel 17, the tubular bar 19 and the receiving bracket 22 are preferably welded together. Round wheel 17, tubular bar 19, and the receiving bracket 22 serve as a single rotating component. As the receiving bracket 22 is rotated the round wheel 17 rotates in-between metal piece 16 and 18, in direct relation thereof. The ball bearing 20 helps the round wheel 17 rotate freely in-between metal piece 18 and metal piece 16, without friction. A cross member 24A connects to one end of angle iron 15A and 15B. Cross member 24B connects to the second end of angle iron 15A and 15B. Cross member 24A and 24B are preferably made of angle iron and are

welded to angle iron 15A and 15B. Both cross member 24A and 24B have a triangular shaped bottom straight edge, which is relatively sharp. Cross member 24A and 24B serve as the mounting base 10A's support pegs. In Fig. 3 the bottom straight edge of both 24A and 24B can be seen extending slightly past the bottom straight edge of angle iron 15A.

Referring now to Fig. 2. A u-bolt 31A connects to one end of the outer facing side of 15A. U-bolt 31C connects to the second end of the outer facing side of angle iron 15A. U-bolt 31B connects to one end of the outer facing side of angle iron 15B. U-bolt 31D connects to the second end of the outer facing side of angle iron 15B. U-bolt 31A and 31C can be seen in Fig. 1 to show their connection to the outer facing side of angle iron 15A.

Relating now to Fig. 5 a partial perspective view of the support member 10B. Fig. 5 also shows the method of attaching the support member 10B to the mounting base 10A. Two elongated bars 32A and 32B, preferably made of aluminum squared-tubing, run parallel to each other spaced a fixed length apart. Cross member 33 and 34 comprises of a flat squared shaped piece of hard material, preferably flat iron. Cross member 33 and 34 connect to the front facing side of both squared-tubing 32A and 32B positioned a specific length apart. Depending on the materials used, connecting cross member 33 and 34 to squared-tubing 32A and 32B can be done by a variety of different methods. A circular hole 35 passes through the center portion of cross member 33. A circular hole 36 passes through the center portion of cross member 34. Hole 35 and 36 are spaced a specific length apart to enable peg 23A and 23B on the receiving bracket 22, to pass through holes 35 and 36. The receiving bracket 22 fits in-between squared-tubing 32A and 32B as peg 23A and 23B are inserted into holes 35 and 36. A portion of peg 23A and 23B extends past the outer surface of cross member 33 and 34. Nut 45 is then screwed onto the extended portion of peg 23A and nut 46 is screwed onto the extended portion of peg 23B. This then secures the support member 10B onto the receiving bracket 22.

Relating now to Fig. 1, Fig. 4A, Fig. 4B, Fig. 5 and Fig. 6 to describe the process and functioning purpose of the enclosed invention. Referring now to Fig. 4B, which is a perspective view of the mounting base 10A, attached to a horizontal tree limb. Mounting base 10A is attached to the lateral side portion of the limb, extending in the same direction

thereof. A strap member 29 connects one of its ends to u-bolt 31A. Strap 29 wraps around the limb connecting its other end to u-bolt 31B. The same method of operation is used to attach strap 30 to u-bolt 31C and 31D. Strap 29 and 30 are preferably ratchet tie down straps, each having hooks connected to each of their ends. Straps 29 and 30 connect to u-bolts 31A through 31D by such hooks. Strap 29 and 30 are tightened, thus causing the bottom edge of 24A and 24B to tear into the bark of the tree, ensuring a secured grip. The receiving bracket 22 is rotated into an upright vertical position. Referring back to Fig. 1. As the receiving bracket 22 rotates, the round wheel 17 rotates in direct relation thereof. As the wheel 17 pivots on its point of axis, any four of the multiple pinholes 26, on the round wheel 17, come directly aligned with the four pinholes 27 and pinholes 25. Such alignment occurs at slight rotating intervals along the 360degree circle of rotation. Referring back to Fig. 4B. Locking pins 28A and 28B are inserted into the aligned holes that were described in Fig. 1. Referring back to Fig. 4B. The locking pins 28A and 28B stabilize the rotational movement of the receiving bracket 22. Referring now to Fig. 4A, which shows a perspective view of the mounting base 10A attached to a vertical tree trunk. In Fig. 4A the receiving bracket 22 is rotated into an upright vertical position. The receiving bracket 22 is then stabilized by the same method described in Fig. 4B. The mounting base 10A can be attached to a vertical tree trunk or a horizontal tree limb, and any angle in-between.

Referring now to Fig. 6. Support member 10B is shown with platform 13 connected to one end of support member 10B and a seat 14 connects to 10B's second end. Platform 13 and seat 14 can be constructed in a wide variety of shapes, sizes and materials. Any person skilled in the construction and manufacture of the relative field, according to the present invention, can choose from the various options. Also connecting the platform 13 and the seat 14 to the support member 10B may also be easily understood and constructed by any person whom is skilled in the making and manufacturing of such tree stands. Support member 10B attaches to the upright, receiving bracket 22 as described in Fig. 5. The interconnection of the support member 10B to the receiving bracket 22 can be done in a variety of different ways. The support member 10B may be constructed in any fashion, to easily be attached and detached to the receiving bracket 22.

The receiving bracket 22 may also be constructed in a number of different ways to easily accept the support member 10B.

Referring back to Fig. 6. The support member 10B achieves an upright vertical position once attached to the receiving bracket 22. The platform 13, shown with an open grid like configuration, achieves a horizontal leveled position perpendicular to the support member 10B. Seat 14 achieves the same horizontal position perpendicular to the support member 10B and directly above the platform 13. An extra strap, not shown, can be attached to the support member 10B to wrap around the tree for extra support.

Fig. 7 is a perspective view of the present invention shown in Fig. 6 being used by a hunter.